Joint Advanced Range Safety System

The purpose of the Joint Advanced Range Safety System (JARRS) program is to develop a state-of-the-art mission planning, risk analysis, and risk management tool for range safety. The program is a collaborative effort between Dryden Flight Research Center and the Air Force Flight Test Center at Edwards Air Force Base.

Range Safety organizations from all major Range and Test Facility Bases are being asked to support the development, testing, and operation of uninhabited aerial vehicles (UAVs) and reusable launch vehicles (RLVs). It is the vision of JARRS to provide range safety support for these missions. The JARRS consists of two primary elements: a mission analysis software tool and the real-time operations tool.

Mission Analysis Software Tool

Using a computerized methodology, the JARSS mission analysis software tool quantifies the range safety risk for a given flight path and its associated vehicle parameters. Computerization streamlines range safety analysis by providing a consistent, high fidelity solution in less time than required by present methods of analysis.

The mission analysis software tool is nearing completion as work on the closeout task continues. Dryden's JARSS development lab is running software Version 2.2. The mission analysis software tool is slated to receive 2006 funding to begin independent software verification and validation from NASA's Independent Verification and Validation Facility in West Virginia. The goal is to make the mission analysis software tool available for government use by the end of 2006.

Real-Time Operations Tool

The real-time operations tool provides the Range Safety Officer with near real-time assessment of the range safety risks during flight. This capability has many possible applications to the UAV or RLV operator, including assessment of UAV overflight of populated areas, allowing extended flight of an anomalous vehicle, recovery of an off-nominal vehicle at an alternate landing site, or selection of an alternate flight or entry path. Work on the JARSS real-time operations tool has not begun.